WHAT IS CLAIMED IS:

1   1.   A substantially purified immunoglobulin
2   polypeptide that specifically binds to a human type beta
3   platelet-derived growth factor receptor (βPDGF-R), wherein
4   binding of the polypeptide has one or more of the following
5   effects:
6   i)   inhibition of PDGF BB or AB binding to the
7   βPDGF-R;
8   ii)   inhibition of PDGF-induced βPDGF-R
9   phosphorylation;
10   iii) inhibition of PDGF-induced dimerization of
11 βPDGF-R;
12   iv)   inhibition of PDGF-induced mitogenesis of
13 cells displaying human βPDGF-R; and
14   v)   inhibition of PDGF-induced chemotaxis and
15 migration of cells displaying βPDGF-R.

1   2.   An immunoglobulin polypeptide of claim 1, wherein
2   the polypeptide is a monoclonal antibody.

1   3.   An immunoglobulin polypeptide of claim 2, wherein
2   the monoclonal antibody is antibody 2A1E2.

1   4.   A substantially purified polypeptide having an
2   amino acid sequence substantially identical to a sequence of a
3   complementarity determining region of an immunoglobulin
4   polypeptide of claim 1.

1   5.   An immunoglobulin polypeptide of claim 1, wherein
2   the polypeptide is linked to a detectable label.

1   6.   An immunoglobulin polypeptide of claim 1, wherein
2   the polypeptide is chimeric.

1   7.   A substantially purified immunoglobulin
2   polypeptide that specifically recognizes an epitope which lies

3   in the second Ig-like domain in the extracellular region of the

4   βPDGF-R.

1   8.   A composition comprising a monoclonal antibody or

2   binding fragment thereof that binds to the human βPDGF-R, which

3   antibody or fragment inhibits <u>in vivo</u> binding of PDGF BB or AB

4   to the receptor.

1   9.   An isolated nucleic acid having a sequence

2   substantially identical to a nucleic acid coding for an

3   immunoglobulin polypeptide or a binding fragment thereof,

4   wherein binding of the polypeptide or fragment to a human

5   βPDGF-R has one or more of the following effects:

6   i)   inhibition of PDGF BB or AB binding to the

7   βPDGF-R;

8   ii)   inhibition of PDGF-induced βPDGF-R

9   phosphorylation;

10   iii) inhibition of PDGF-induced dimerization of

11   βPDGF-R;

12   iv)   inhibition of PDGF-induced mitogenesis of

13   cells displaying the human βPDGF-R; and

14   v)   inhibition of PDGF-induced chemotaxis and

15   migration of cells displaying βPDGR-R.

1   10.   A nucleic acid of claim 9, wherein the nucleic

2   acid is operably linked to a promoter.

1   11.   A nucleic acid of claim 10, wherein the promoter

2   and the nucleic acid are contained in an expression vector.

1   12.   A cell line transfected, transformed, or infected

2   with a nucleic acid of claim 9.

1   13.   A method of producing a substantially purified

2   immunoglobulin polypeptide, or binding fragment thereof, which

3   binds to a human type beta PDGF receptor (βPDGF-R), wherein the

4   binding of the polypeptide or fragment to the βPDGF-R has one

5   or more of the following effects: inhibition of PDGF BB or AB

6   binding to the βPDGF-R; inhibition of PDGF-induced βPDGF-R

7   phosphorylation; inhibition of PDGF-induced dimerization of the

8   βPDGF-R; and inhibition of PDGF-induced mitogenesis of cells

9   displaying human βPDGF-R; and inhibition of PDGF-induced

10   chemotaxis and migration of cells displaying human β-PDGF; the

11   method comprising:

12   i)   growing a cell line comprising a nucleic acid

13   encoding the immunoglobulin polypeptide; and

14   ii)   harvesting the immunoglobulin polypeptide.

1   14.   A method of claim 13, wherein the cell line is a

2   hybridoma.

1   15.   A method of claim 14, wherein the hybridoma is

2   ATCC no. HB10938.

1   16.   A method of claim 13, wherein the immunoglobulin

2   polypeptide is a monoclonal antibody.

1   17.   A method of treating a human having a

2   PDGF-mediated disease involving proliferation, migration or

3   chemotaxis of smooth muscle cells, comprising administering to

4   the patient a therapeutically effective dose of at least one

5   immunoglobulin polypeptide according to claim 1, or fragments

6   of the immunoglobulin polypeptide, and a pharmaceutically

7   acceptable carrier.

1   18.   An isolated cell line designated as ATCC no.

2   HB10938.